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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/650,889

08/28/2003

James T. Veligdan

01-40101-US

8726

7066

7590

12/02/2004

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EXAMINER

SEVER, ANDREW T

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/650,889

**Applicant(s)**

VELIGDAN ET AL.

**Examiner**

Andrew T Sever

**Art Unit**

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 29 and 40-45 is/are rejected.
- 7) ☒ Claim(s) 8, 10-28 and 30-39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 7, 9, 29, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Veligdan (US 5,455,882 which will be indicated as ‘882.)

The ‘882 patent teaches in figure 8 a display system comprising:

An optical panel including a plurality of optical wave-guides stacked together, with first ends thereof defining an inlet face, and opposite ends thereof defining an outlet face (see figure 7 for example which shows the construction of the screen);

A projector that projects an image beam outbound across said inlet face for display on said outlet face (projector 20a);

An imaging device that images said image beam is optically aligned between said projector and said inlet face (see figure 7, part 32 is a modulator, which modulates intensity);

At least one optical detector that detects a location on said outlet face of an inbound light spot (50 and 42); and

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At least one channeling element that channels at least a portion of said light spot from said panel to said at least one detector (as described in column 12 lines 50-65 the light is channeled to the detectors, the waveguides of the panel serving the dual function of the channeling element.)

*With regards to applicant's claims 2 and 3:*

The '882 teaches in column 11 lines 5-25 placing an "X" or some other visible mark at a indicated location corresponding to a detected spot location.

*With regards to applicant's claim 4:*

Clearly figure 8 depicts a menu being displayed.

*With regards to applicant's claim 6:*

Figure 8 teaches a remote control (38) for emitting a light beam to form said inbound light spot.

*With regards to applicant's claim 7:*

The '882 patent teaches in column 11 lines 5-25 that the controller emits infrared light.

*With regards to applicant's claim 9:*

As clearly depicted in figure 8 the detectors receive the light through the same channeling elements (though on the sides) as the light is in reverse projected.

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*With regards to applicant's claim 29:*

The '882 patent teaches in column 10 lines 16-28 that the detector(s) is/are comprised of an array of photodiodes or a CCD.

*With regards to applicant's claim 40:*

The '882 patent teaches in column 10 line 6 that the wave-guides are in ribbon form.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Veligdan '882 as applied to claims 1-4, 6, 7, 9, 29, and 40 above, and further in view of Kitazawa (US 2003/0043350.)

As described in more detail above the '882 patent teaches a display system comprising among other things at least one optical detector and at least one channeling element that channels a light spot generated outside of the display system by a user (by a device such as a remote control) to the detector, however the '882 patent does not teach generating an indicator where the light spot is generated on the display which takes the form of a visible cursor.

Generating a visible cursor at the spot pointed at in an interactive projection systems is taught by Kitazawa, which teaches in paragraph 38 that a pointer is displayed at the location of the indication light spot. Given that generating a visible pointer allows the user to know where they are pointing to insure that they select the correct position (icon). Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to display a visible pointer at the indication light spot.

5. Claims 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veligdan '882 as applied to claims 1-4, 6, 7, 9, 29, and 40 above, and further in view of Veligdan et al. (US 6,175,679 which will be indicated as '679)

As described in more detail above the '882 patent teaches among other things at least one channeling element that channels a light spot generated outside of the display system by a user (by a device such as a remote control) to a detector, however the '882 patent does not teach the inbound light spot being formed by covering a spot on the outlet face of the display where the covering element is selected from one of the group consisting of finger, palm, pencil eraser, stylus, and paper.

The '679 patent teaches an optical keyboard which comprises a display similar to that taught by the '882 patent including the use of wave guides and a detector (see figures 1 and 2.) The '679 patent teaches in column 4 lines 13-44 the method by which the display system (keyboard) detects input, which includes covering a spot with a finger or palm, which comprises of reflecting a portion of the image beam to provide the inbound light spot, as is claimed by applicant's claims 42 and 43, when a user touches the panel as

claimed by applicant's claim 44. Alternatively the '679 patent teaches placing a transparent plastic cover between the user (the covering element that produces the spot not the transparent plastic cover which does not produce the spot) and the outlet face as is claimed by applicant's claim 45. Given that being able to use more varied and convenient means for inputting data (a finger is much more convenient than a remote control) and given the teachings of the '679 patent of a detector to use with a wave guide type interactive display system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the system of the '882 system be such that the spot can be generated by a covering element selected from the group consisting of finger, palm, pencil eraser, stylus, and paper as taught by the '679 patent.

*Allowable Subject Matter*

6. Claims 8, 10-28, and 30-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of the allowable subject matter: Claims 10-12 have been amended (through claim 10) to include the limitation "wherein each of said waveguides is stacked without inclination." Clearly the '882 patent is inclined and further other waveguide based displays that are not inclined do not teach detectors, since it would not be obvious to combine the detectors of the '882 display with

a parallel waveguide based display (largely since as explained in the reasons for indication of allowable subject matter in the non-final mailed on 7/13/2004 it would require the use of the disclosed channeling element which is not taught in the prior art) claims 10-12 are indicated as being allowable if re-written in independent form including all of the limitation of the base claim 1. The other indicated as being allowable if re-written in independent form claims are allowable for the reasons given in the non-final action mailed on 7/13/2004.

### ***Response to Arguments***

8. Applicant's arguments filed 11/15/2004 have been fully considered but they are not persuasive:

Applicant argues that the '882 patent does not read on independent claim 1, in that it does not explicitly teach a channeling element which as applicant outlines on page 11, that is "a separate and distinct element from the panel and therefore from the waveguides." Although it is true that the '882 patent does not explicitly teach a channeling element that is separate and distinct, it is irrelevant. Even if the only channeling element were the waveguides of the panel, this would meet the limitations of the claim. With regards to the channeling element, claim 1 claims "at least one channeling element that channels at least a portion of said light spot from said panel to said at least one detector." The only requirement is that the channeling element channel the light spot from the panel to the detector there is no requirement that the element be separate from the panel or even from the detector, only that it channel the light spot from point a: the panel (which is



specifically the inlet face) and point b: the detector. Given that the majority of the panel does not have a light spot on it, even with a very strict reading of this limitation, (i.e. that the part of the panel with the light spot immediately impinging on it cannot qualify as the channeling element) there is certainly plenty of other panel/waveguides serving as the channeling element including those immediately beneath the surface.

Accordingly the office takes the view that any part of the display system, which channels light from the surface immediately receiving the light spot to the detector, is a channeling element. Accordingly since the majority of the panel/waveguides of the '882 patent serves this purpose even while serving other purposes claim 1 stands rejected and the rejection is made final. All of applicant's other rejections were based on this argument of claim 1 and are therefore also considered not persuasive and the rejections have been repeated and made final with the exception of the rejection of claims 10-12 which applicant amended in such a way to make allowable if re-written in independent form.

### *Conclusion*

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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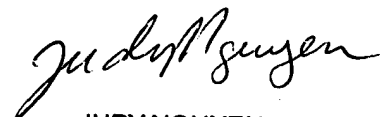
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS



JUDY NGUYEN  
PRIMARY EXAMINER